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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,300	08/31/2005	George Fenwick Smith	1031-21	3579

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EXAMINER

MAZUMDAR, SONYA

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/526,300	<b>Applicant(s)</b> SMITH ET AL.	
	<b>Examiner</b> Sonya Mazumdar	<b>Art Unit</b> 1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because in Figure 1, "14" is directed towards a mount block, not a heater chamber. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: on page 4, 1<sup>st</sup> line of the 4<sup>th</sup> paragraph, "minimising" should be changed to "minimizing"; on page 8, 2<sup>nd</sup> and 4<sup>th</sup> lines of the 4<sup>th</sup> paragraph, "mould" should be changed to "mold".

Appropriate correction is required.

***Claim Objections***

3. Claims 12 and 14 through 18 objected to because of the following informalities: Claims 14 and 15 are dependent on claim 12, which is written to be dependent on a cancelled claim 10. Claims 16 through 18 are written to be dependent on a cancelled claim 10 as well. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "and/or" in claim 15 is a relative term which renders the claim indefinite. The term "and/or" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 11, 12, 16, and 18 are rejected under 35 U.S.C. 102(b) as being unpatentable over Hastie et al. (WO 01/96123)

Hastie et al. teaches an apparatus used for printing an image onto a three dimensional surface. A clamp is used to hold the transfer element having an image thereon, opposite a three dimensional surface on which an image will be printed onto. A heating chamber is used for heating the transfer element and causes for sublimation of pigments in the ink printed on the transfer element, resulting in a transfer of the image onto the surface. The apparatus incorporates the use of a vacuum to apply the heated transfer element to the surface with substantially uniform pressure across the area of contact between the transfer element and the surface such that the image faces the surface. (page 10, paragraphs 1 and 2; page 12, paragraph 4; Figure 2)

Hastie et al. does not teach of a protective coating applied onto the surface prior to image transfer. However, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (see MPEP § 2115)

With respect to claim 12, Hastie et al. teaches a moulded heating chamber that has similar dimensions and matches the contours of the surface of the article. Also, a transfer element is clamped in position over the article. (page 7, paragraph 7; page 10, paragraph 1)

With respect to claim 16, Hastie et al. teaches providing a heating chamber to blow hot air over the article during transfer. (page 10, paragraph 3)

With respect to claim 18, Hastie et al. teaches a vacuum forming device as an application means. (page 12, paragraphs 4 and 5)

8. Claim 20 is rejected under 35 U.S.C. 102(b) as being unpatentable by Hastie et al.

Hastie teaches a transfer element, adapted to have an image printed thereon. The transfer element comprises a carrier layer, adapted to be heated to make the carrier layer more flexible, an image supporting layer, and a metallised coating layer. (abstract; page 3, paragraphs 4-6)

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1 through 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastie et al. in view of Schulzen et al. (US 4681034)

Hastie et al. teaches a method of printing an image onto a three dimensional surface. A transfer element is heated to make it more flexible, and then applied to a three dimensional surface having base and receptor coatings thereon, with substantially uniform pressure across the area of contact between the transfer element and the surface, so the image faces the surface. The transfer element is heated to at least partially transfer the image from the transfer element to the three-dimensional surface. (abstract; page 2, paragraph 5 – page 3, paragraph 2; page 4, paragraph 2; page 9, paragraph 10)

Although Hastie et al. teaches applying base and receptor coatings prior to image transfer and the transfer element is heated to partially transfer the image from the transfer element onto a surface, there is no teaching of a protective coating applied onto the surface prior to image transfer. Schulzen et al. teaches transfer printing a substrate with a synthetic resin coated surface where the dyes of the transfer element sublime and penetrate at least partially into the synthetic resin coating of the substrate. (abstract; column 1, lines 32-38; column 2, lines 3-8)

It would have been obvious for Hastie et al. to use Schulzen's synthetic resin coating as the protective coating, and one would have been motivated to do so because a resin coating accepts sublimable dyes attached to articles that do not accept sublimable dyes.

With respect to claim 2, Hastie et al. does not teach applying a protective coating prior to image transfer. Schulzen et al. teaches applying a synthetic resin coating to a substrate prior to image transfer. (abstract; column 1, lines 32-38; column 2, lines 3-8)

It would have been obvious for Hastie et al. to apply Schulzen's synthetic resin coating on a surface prior to image transfer, and one would have been motivated to do so to eliminate the need to process a final protective coating over an article.

With respect to claim 3, while Hastie et al. teaches applying a receptor coating (page 4, paragraph 2; Figure 1), Hastie et al. does not teach applying a protective coating thereafter. Schulzen et al. teaches applying a synthetic resin coating to the surface of a substrate. (abstract; column 1, lines 32-38; column 2, lines 3-8)

It would have been obvious for Hastie et al. to apply a receptor coating before applying Schulzen's protective coating, and one would have been motivated to do so to ensure adhesion between the protective coating and the substrate.

With respect to claim 4, Hastie et al. teaches printing an image onto a transfer element. (page 5, paragraph 2)

With respect to claim 5, Hastie et al. teaches printing an image onto a transfer element by means of a digital printer (page 5, paragraph 2)

With respect to claim 6, Hastie et al. teaches applying a transfer element to a surface by vacuum forming (page 5, paragraph 1)

With respect to claim 7, Hastie et al. teaches heating the transfer element by means of hot air. (page 8, paragraph 3)



With respect to claim 8, Hastie et al. teaches applying a metallised coating on a transfer element. (page 3, paragraph 6)

11. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Hastie et al. in view of Schulzen et al. as applied to claim 1, and further in view of Gibbs et al. (US 3888719)

The teachings of claim 1 are as described above.

The combined teachings of Hastie et al. and Schulzen et al. do not disclose a step of removing solvent from a region adjacent to the transfer element during heating. Gibbs et al. teaches a vacuum press used for laminating and bonding sheets together under heat and pressure, where a dry-mount tissue used for lamination is heated at such a temperature to allow removal of free moisture. (column 1, lines 28-31; column 9, lines 58-61)

It would have been obvious for Hastie et al. and Schulzen et al. to remove any free moisture, as taught by Gibbs et al. One would have been motivated to do so to avoid deformities in the final product such as bubbles caused by air or moisture trapped between layers.

12. Claim 13 is rejected under 35 USC 103(a) as being unpatentable over Hastie et al. as applied to claim 11 in view of Rothwell et al. (US 6220327)

The teachings of claim 11 are as described above.

Hastie et al. does not teach a recess that is at least partially removable from a housing and a fixing device adapted to fix a transfer element in response to incertion of the recess into the housing. Rothwell et al. teaches a drawer system for fusing cards to

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a backing where the drawer is opened to insert the article; when the drawer is fully inserted, a locking means fixes the drawer with the image and the article to be printed on for bonding (column 5, line 63 – column 6, line 34; Figure 12)

It would have been obvious to one having ordinary skill in the art to install a drawer system for printing onto an article such as Rothwell's, and one would have been motivated to do so for easier insertion of an article for printing without subjecting oneself to the heat from the heating chamber.

13. Claims 14, 15 and 17 are rejected under 35 USC 103(a) as being unpatentable over Hastie et al. as applied to claim 11 in view of Gibbs et al.

The teachings of claim 11 are as described above.

With respect to claim 14, Hastie et al. does not teach fixing a moulded chamber in the housing. Gibbs et al. teaches fixing a platen assembly by various support means. (Figure 2)

It would have been obvious for Hastie et al. to provide means for fixing the molded chamber as Gibbs et al. did for extra external support of the chamber to the apparatus during application.

With respect to claim 15, Hastie et al. teaches controlling the temperature of the heating chamber (page 7, paragraph 2), but does not teach a controlling means. Gibbs et al. teaches a control console with thermostats to control the temperature of the heating unit. (column 8, line 46; column 9, lines 42-48)

It would have been obvious for Hastie et al. to include thermostats as Gibbs et al. did in the invention, and one would have been motivated to do so to monitor the temperature throughout application.

With respect to claim 17, Hastie et al. does not teach a means to remove moisture. Gibbs et al. teaches a vacuum pump operating continuously to assist in complete removal of moisture. (column 9, lines 49-51)

It would have been obvious for Hastie et al. to include a means to remove moisture as Gibbs et al. did, and one would have been motivated to do so to ensure there are not air bubble formed between the transfer element and the surface of the article.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Mazumdar whose telephone number is (571) 272-6019. The examiner can normally be reached on 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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